

CAPITAL PROJECT JUSTIFICATION 2008-2009

JOB.NO:

IGS08-XX

W.O. #07-19854-0

TITLE:

Replace water treatment quick lime hopper dust collector 2

DESCRIPTION:

New dust collector will be a pulse jet clean on demand cleaning system. The filtration system will be raw edge top disc bottom load with PTFE Teflon on acrylic filter bags. The dust collector is sized with a 2000 CFM exhaust fan and a 3.8:1 air-to-cloth ratio to meet regulation requirements.

JUSTIFICATION:

REGULATORY REQUIREMENT

REGULATION:

State Regulation: R307-201.3(2)

Title V Operating Permit: Condition II.B.9.a, Condition II.B.1.c

Approval Order: Condition 11.B, Condition 21,

NONCOMPLIANCE:

Possible violation of operating permit and fines imposed based on daily occurrences

MEANS OF COMPLIANCE:

Re-size dust collector to properly handle the air volume from the transfer blower

DEADLINE FOR COMPLIANCE:

None

ADDITIONAL DETAIL:

The current dust collector when started up with out the transfer blower on will create a vacuum on the quick lime hopper as desired. When the transfer blower is turned on and material starts to enter the quick lime hopper the hopper becomes pressurized pushing dust out of the relief vent in the top of the hopper and lime into the slakers plugging them.

Testing of the airflow of the exhaust fan VS. the transfer blower showed that the blower puts out approximately 1175 - 1225 CFM and the fan approximately 1150 - 1200 CFM. The differential pressure at the time of the test was 1.5 inches of water. This is optimal operating condition. The CFM of the fan will go down as the dust cake builds on the bags causing a higher differential pressure. This makes it impossible for the dust collector to ever pull a vacuum while the transfer blower is running. This shows that the exhaust fan on the dust collector is under sized.

The lime hopper dust collector operating permit is base on emissions of grains/ tons. If only the fan size is increased then the air to cloth ratio changes causing the grains/ tons

IGS08-XX

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CAPITAL PROJECT JUSTIFICATION 2008-2009

emission to go up. This will require us to reopen the operating permit. If the bag house is increased proportionally to the fan increase the air to cloth ratio will not change keeping the emission the same. This will allow us to operate to the same permit we currently have.

COST ESTIMATE:

	08-09
Engineering Labor	\$ 4,000
Installation Labor	\$ 11,000
Contractor Labor	\$ 8,600
Material	\$ 27,000
Job Total	\$ 50,600

ALTERNATIVES:

Decrease the CFM of the transfer blower. Continue to operate in violation to operating permit.

EFFECT OF DEFERRAL:

Lime transfer line could become plugged. Could be fined by OSHA and/or the DAQ.

PROJECT HISTORY:

See above

PROJECT COST

MATERIAL COST

DESCRIPTION	QTY.	TOTAL COST
New Dust Collector	1	\$15,000.00
Controller	1	\$3,000.00
Hopper Adaption Base	1	\$4,000.00
Communication & Power Cables	1	\$2,000.00
Sub Total		\$24,000.00

LABOR COST

DESCRIPTION	HRS	TOTAL COST
Contractor Labor		
Removal of Old Dust Collector	1	\$3,000.00
Install New Dust Collector	1	\$3,500.00
IPSC Labor		
Install Controller	1	\$1,500.00
Pull Communication Cables		\$3,000.00
Pull Power Cables	21	\$3,000.00
Install Controller Cabinet	30	\$1,500.00
Sub Total	54	\$15,500.00

GENERAL

DESCRIPTION	QTY.	TOTAL COST 1 UNIT
Engineering	1	\$4,000.00
Mobilization	1	\$1,000.00
Contingency	1	\$5,925.00
Sub Total		\$10,925.00

PROJECT TOTAL		\$50,425.00
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